REMARKS

Claims 1-27 and 31-35 are pending. Claims 1, 21, 25, and 33-35 are in independent form.

This response is accompanied by a Request for Continued Examination and withdraws the appeal perfected with the Notice of Appeal filed January 29, 2007. *See, e.g., M.P.E.P.* § 1215.01.

As shown above, independent claims 1, 21, 25, and 33 all relate to photoresists in which a tertiary carbon is bonded to a lactone carbonyl oxygen and a side group or chain is bonded to the polymer backbone and includes a styrene ring.

The Examiner's Action mailed June 14, 2007 has contended that such structures are obvious to those of ordinary skill based on the disclosures of Japanese Patent Publication No. 2002-082441 by Yoon et al. (hereinafter "Yoon") and U.S. Patent No. 6,680,157 to Fednyshyn (hereinafter "Fednyshyn").

During the course of prosecution, various statements have been made in support of such contentions. In the present incarnation of the rejection, the Examiner's Action contends that it would have been obvious to add Fednyshyn's "PHS monomer" to achieve "a pattern having reduced edge roughness."

Applicant respectfully disagrees. There is nothing in Yoon that describes or suggests that edge roughness needs to be reduced. Moreover, there is no reason to believe that Fednyshyn's monomers will have any impact on the edge roughness achieved with Yoon's polymers, especially any of Yoon's polymers where solubility is switched by ring opening reactions of lactones as recited in the claims. This present motivation to combine thus represents pure speculation regarding the properties of the resulting combination.

Another example of a statement made in support of the contention that the recited subject matter would have been obvious in light of Fednyshyn and Yoon is that Fednyshyn allegedly demonstrates that "it is well known in the art to employ styrenes in combination with maelic anhydride monomers." *See id.*, page 7. The statement presumably relies upon Yoon's description that maelic anhydrides can be included in resists that include annular lactones having a tertiary carbon bonded to the lactone carbonyl oxygen. *See, e.g., Yoon*, para. [0143], [0150]. This statement thus amounts to an assertion that because

-Yoon's polymers include lactones having a tertiary carbon bonded to a lactone carbonyl oxygen and maelic anhydrides, and

-Fednyshyn's polymers include maelic anhydrides and styrene rings,

that a polymer including lactones having a tertiary carbon bonded to a lactone carbonyl oxygen and styrene rings is obvious.

Applicant respectfully disagrees. To begin with there must be some reason why one of ordinary skill would pick and chose the recited moieties other than the existence of other polymers that share a common moieties. The attempted rejection thus amounts to hindsight-based reasoning where applicant's specification is used a guide to pick and chose from among the teachings of the otherwise unrelated references.

Moreover, the recited subject matter is at odds with this alleged motivation to combine Yoon and Fednyshyn based on the presence of maelic anhydrides in both references.

In this regard, claim 1 recites that a lactone having a tertiary carbon bonded to the lactone carbonyl oxygen is reactable to form an open ring structure to switch a solubility of the photoresist in a developer without generating an organic species that can outgas in a vacuum environment. As another example, claim 21 recites that the solubility of the photoresist in a developer is switched by exposing a lactone that includes a tertiary carbon bonded to the lactone carbonyl oxygen and thereby causing the lactone to undergo a ring opening reaction upon exposure to an acid catalyst without molecules outgassing from the photoresist. Thus, the claimed subject matter recites that solubility is switched by ring opening reactions of lactones having a tertiary carbon bonded to the lactone carbonyl oxygen.

However, as discussed previously, as the amount of maelic anhydride and other comonomers in Yoon's polymers increases, the amount of lactone decreases. *See, e.g., Yoon*, para. [0063], [0065]. In other words, the more maelic anhydride and other comonomers in Yoon's polymers, the less likely that one of ordinary skill would be able to achieve the claimed solubility switch by a ring opening reaction of the claimed lactones. Any motivation to combine based on the presence of maelic anhydrides in both references makes it less likely that the recited subject matter would actually be achieved.

Accordingly, claims 1, 21, 25, 33, and the claims dependent therefrom, are not obvious over Yoon and Fednyshyn. Applicant asks that all claims be allowed.

Please apply the fee for the Request for Continued Examination, along with any other charges or credits, to Deposit Account No. 06-1050.

Respectfully submitted,

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